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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RAJARAM RAMESH,
KUMAR BALACHANDRAN, and HAVISH KOORAPATY

Appeal 2016-001595
Application 12/333,147
Technology Center 2400

Before MAHSHID D. SAADAT, NATHAN A. ENGELS, and
STEVEN M. AMUNDSON, *Administrative Patent Judges*.

AMUNDSON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants¹ seek our review under 35 U.S.C. § 134(a) from a final rejection of claims 1–24, 26, 27, 29, 30, and 32–42, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ According to Appellants, the real party in interest is Telefonaktiebolaget LM Ericsson. Br. 3.

STATEMENT OF THE CASE

The Invention

According to the Specification, the “invention pertains to telecommunications, and particular to an initial ranging procedure involved in wireless telecommunications.” Spec. ¶ 1.² The Specification explains that a base station and a wireless terminal communicate over an air interface and “the base station mak[es] an identification or categorization of the wireless terminal during a ranging procedure,” where the “identification or categorization concerns whether or not the wireless terminal has an enhanced capability.” *Id.* ¶ 24.

Exemplary Claim

Independent claim 1 exemplifies the subject matter of the claims under consideration and reads as follows, with italics indicating the limitations at issue in claim 1:

1. A method of operating a communications network comprising a base station and a wireless terminal which communicates over an air interface with the base station, the method comprising:

the base station making a categorization of the wireless terminal during a ranging procedure, *the categorization being whether or not the wireless terminal has an enhanced capability, the categorization being made on a basis of a transmission characteristic of the wireless terminal at a physical layer*, the transmission characteristic being a radio resource used by the wireless terminal, the radio resource being

² This decision uses the following abbreviations: “Spec.” for the Specification, filed December 11, 2008; “Final Act.” for the Final Office Action, mailed July 2, 2014; “Adv. Act.” for the Advisory Action, mailed November 20, 2014; “Br.” for the Appeal Brief, filed April 2, 2015; and “Ans.” for the Examiner’s Answer, mailed September 17, 2015.

a codeword utilized by the wireless terminal as a spreading code;

the base station making the categorization of the wireless terminal during an initial ranging procedure in which a set of codewords is allocated for use during the ranging procedure by the wireless terminal with the enhanced capacity; and

the base station communicating with the wireless terminal in a manner to utilize the enhanced capability of the wireless terminal.

Br. 43 (Claims App.).

The Prior Art Supporting the Rejections on Appeal

As evidence of unpatentability, the Examiner relies on the following prior art:

Lee et al. ("Lee")	US 2005/0250499 A1	Nov. 10, 2005
Eom et al. ("Eom")	US 2006/0239241 A1	Oct. 26, 2006
Tzavidas et al. ("Tzavidas")	US 2007/0026881 A1	Feb. 1, 2007
Ju et al. ("Ju")	US 2007/0202882 A1	Aug. 30, 2007
Harris et al. ("Harris")	US 2007/0211787 A1	Sept. 13, 2007
Li et al. ("Li")	US 2008/0161000 A1	July 3, 2008
Maheshwari et al. ("Maheshwari")	US 2009/0109932 A1	Apr. 30, 2009 (filed Oct. 25, 2007)

The Rejections on Appeal

Claims 1–5, 11–14, 20, 21, 24, 34–38, 41, and 42 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tzavidas and Harris. Final Act. 9–29.

Claims 26, 27, 29, 30, 32, and 33 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tzavidas, Harris, and Ju. Final Act. 30–31.

Claims 9, 18, and 23 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tzavidas, Harris, and Maheshwari. Final Act. 31–32.

Claims 6, 7, 15, 16, 22, 39, and 40 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tzavidas, Harris, and Li. Final Act. 32–36.

Claims 8 and 17 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tzavidas, Harris, Li, and Lee. Final Act. 36–37.

Claims 10 and 19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tzavidas, Harris, Ju, and Eom. Final Act. 37–39.

ANALYSIS

We have reviewed the rejections of claims 1–24, 26, 27, 29, 30, and 32–42 in light of Appellants’ arguments that the Examiner erred. For the reasons explained below, we disagree with Appellants’ assertions regarding error by the Examiner. We adopt the Examiner’s findings in the Final Office Action and Answer and add the following primarily for emphasis.

The Rejection of Claims 1–5, 11–14, 20, 21, 24, 34–38, and 41 Under 35 U.S.C. § 103(a)

CATEGORIZING FOR ENHANCED CAPABILITY BASED ON A PHYSICAL-LAYER TRANSMISSION CHARACTERISTIC

Appellants argue that the Examiner erred in rejecting independent claims 1, 11, 20, 24, and 34 because “Tzavidas and Harris in combination do not disclose ‘the categorization being whether or not the wireless terminal has an enhanced capability, the categorization being made on a basis of a transmission characteristic of the wireless terminal at a physical layer.’”

Br. 28; *see id.* at 34–35. In particular, Appellants contend that in Tzavidas a

wireless terminal explicitly provides capability information to a base station in a media access control (MAC) layer message, and in contrast to the claims, the base station does not make a capability categorization based on “a transmission characteristic of the wireless terminal at a physical layer.” *Id.* at 29 (emphasis omitted). Appellants then contend that “Harris cannot correct this deficiency” because in Harris a base station assigns codes based on a wireless terminal’s location. *Id.* at 29–31; *see id.* at 32–33 (citing Harris ¶ 33). According to Appellants, Harris “at best teaches categorizing whether or not the wireless terminal is located within a reuse coverage region.” *Id.* at 31.

Appellants’ arguments do not persuade us of Examiner error because the Examiner relies on the combination of Tzavidas and Harris for the disputed limitations. Ans. 3–4, 7–8, 10–11; *see, e.g.*, Final Act. 3–4, 9–15; Adv. Act. 2. An obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim” because the analysis “can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). “A person of ordinary skill is also a person of ordinary creativity, not an automaton.” *Id.* at 421. A person of ordinary skill will be able to fit together the teachings of multiple references. *See id.* at 420.

Here, the Examiner finds that Tzavidas teaches that (1) a wireless terminal sends a “ranging request RNG_REQ” message to a base station and (2) the “ranging request RNG_REQ” message includes a field called “network entry management message processing delays” that the base station uses to determine the wireless terminal’s processing speed, i.e.,

whether “slow” or “fast.” Ans. 3; *see, e.g.*, Final Act. 9–10 (citing Tzavidas ¶¶ 20–21, 38–42, 44–51, Abstract, Figs. 3–4, 6).

For the capability categorization based on a physical-layer transmission characteristic, the Examiner relies on Harris. Ans. 4; *see, e.g.*, Final Act. 11–13. More specifically, the Examiner finds that Harris teaches that (1) a wireless terminal uses signal strength or terminal priority class to select a suitable code; (2) the wireless terminal sends the selected code to a base station in an “initial access signal”; and (3) the base station assigns link bandwidth to the wireless terminal based on the code received from the wireless terminal. Ans. 4; *see, e.g.*, Final Act. 11–13 (citing Harris ¶¶ 3, 18–22, 29, 33, 36, Figs. 3–5). The Examiner further finds that Harris teaches that the base station assigns a smaller amount of link bandwidth where the received code indicates a comparatively strong signal strength. Ans. 5, 9; *see, e.g.*, Final Act. 12–13. Conversely, the base station assigns a larger amount of link bandwidth where the received code indicates a comparatively weak signal strength. *See* Br. 32–33 (citing Harris ¶ 33). The Examiner also finds that Harris teaches that the base station preferentially assigns link bandwidth where the received code indicates that the wireless terminal belongs in a higher priority class. Ans. 5, 9; *see, e.g.*, Final Act. 12–13.

Referring to Tzavidas’s “ranging request RNG_REQ” message, the Examiner reasons that the field denoting “fast” or “slow” processing indicates whether or not the wireless terminal has an enhanced capability. Ans. 3. The Examiner further reasons that when a base station in Harris assigns a smaller amount of link bandwidth because a received code indicates a comparatively strong signal strength, the “the wireless terminal would possess ‘enhanced capacity’ in that it is able to more efficiently

utilize network resources” by “consum[ing] a smaller amount of bandwidth to achieve satisfactory communication quality.” *Id.* at 5. The Examiner also reasons that when a base station in Harris preferentially assigns link bandwidth because a received code indicates that the wireless terminal belongs in a higher priority class, the “higher priority wireless terminal would be characterized by an ‘enhanced capability’ of being ensured preferential resource assignments.” *Id.* The Examiner explains that under the broadest reasonable interpretation of “enhanced capability,” any of these capability categorizations corresponds to the claimed capability categorization. *Id.* at 3–5, 10.

Appellants argue that “assigning a smaller bandwidth based on the signal strength is highly suggestive of assigning a bandwidth based on” a wireless terminal’s location relative to a base station and “not an indication that the remote unit [wireless terminal] has enhanced capabilities.” Br. 34. As the Examiner indicates, however, that argument rests on an improperly narrow interpretation of “enhanced capability.” Ans. 7, 8–10. “[D]uring examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification.” *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000). Here, the Specification notes that a “good”/“poorer” signal and “transmit power” constitute physical-layer transmission characteristics. Spec. ¶¶ 6, 16. Hence, the Examiner properly relies on signal strength as a physical-layer transmission characteristic that may have an “enhanced capability.”

The Examiner points out that Appellants make “arguments against the cited art individually” and that Appellants’ “piecemeal attacks on the two references individually” do not address the Tzavidas-Harris combination.

Ans. 7, 10–11. “[T]he test for combining references is not what the individual references themselves suggest but rather what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art.” *In re McLaughlin*, 443 F.2d 1392, 1395 (CCPA 1971); *see In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Accordingly, Appellants have not persuasively argued that the Examiner erred in rejecting the independent claims for obviousness based on the Tzavidas-Harris combination.

THE PROPRIETY OF COMBINING TZAVIDAS AND HARRIS

Appellants argue that “the combination of Tzavidas and Harris is improper” because the combination “renders Harris unsatisfactory for its intended purpose.” Br. 37. More specifically, Appellants assert that the combination “would defeat the purpose of Harris,” i.e., “to enable greater code reuse.” *Id.* at 35 (emphasis omitted). Appellants also assert that “the modification suggested in the Office Action would not result in increasing the number of available codewords” but would instead reduce the number because two wireless terminals could require different codewords even though they have the same “enhanced capability” or the same legacy capability. *Id.* at 36.

Appellants’ argument does not persuade us of Examiner error because, as the Examiner explains, that argument rests on an improperly narrow interpretation of “enhanced capability” resulting from a comparison of IEEE standard 802.16m to an earlier version of that standard. Ans. 11; *see Spec.* ¶ 10 (describing IEEE standard 802.16m as an “evolution” of IEEE standard 802.16e).

In addition, the Examiner explains, and we agree, that Appellants’ argument mischaracterizes the rejection because the argument employs

Harris as the primary reference modified by Tzavidas, whereas the rejection employs Tzavidas as the primary reference modified by Harris. Ans. 12–13. Moreover, obviousness does not depend on “whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference.” *Keller*, 642 F.2d at 425. “Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.” *Id.*

With regard to Tzavidas’s “ranging request RNG_REQ” message modified with spreading channel codes according to Harris, Appellants assert that the “spreading codes themselves would provide no information regarding the capabilities” of wireless terminals. Br. 36 n.1. As the Examiner points out, however, that assertion disregards “a critical teaching of Harris, which discloses utilizing the spreading channel code to convey information on whether to provide efficient or preferential bandwidth allocation.” Ans. 14; *see* Final Act. 5–6.

Appellants contend that “Harris teaches away from the claimed invention.” Br. 37. To teach away, a reference must “criticize, discredit, or otherwise discourage” the subject matter claimed. *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). Here, Appellants identify no portions of Harris that “criticize, discredit, or otherwise discourage” the subject matter of claims 1, 11, 20, 24, and 34. *See* Br. 35–37.

SUMMARY FOR INDEPENDENT CLAIMS 1, 11, 20, 24, AND 34

For the reasons discussed above, Appellants’ arguments have not persuaded us that the Examiner erred in rejecting claims 1, 11, 20, 24, and 34 for obviousness based on Tzavidas and Harris. Hence, we sustain the rejection of these claims.

DEPENDENT CLAIMS 4, 5, 14, 21, AND 35–38

Appellants dispute the rejection of dependent claims 4, 5, 14, 21, and 35–38 for obviousness based on Tzavidas and Harris. Br. 37–39. For each claim, however, Appellants simply quote the claim language and assert that it “logically follows that the combination of Tzavidas and Harris also cannot teach or suggest the feature” recited in the claim. *Id.* Appellants do not discuss the references or explain how the claims distinguish over the references. *Id.* “A statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim.” 37 C.F.R. § 41.37(c)(1)(iv); see *In re Lovin*, 652 F.3d 1349, 1356–57 (Fed. Cir. 2011). Because Appellants do not argue these dependent claims separately, they stand or fall with the independent claims. See 37 C.F.R. § 41.37(c)(1)(iv). Hence, we sustain the obviousness rejection of claims 4, 5, 14, 21, and 35–38.

DEPENDENT CLAIMS 2, 3, 12, 13, AND 41

Appellants do not present any patentability arguments for dependent claims 2, 3, 12, 13, and 41 beyond the arguments for the independent claims. Br. 37–39. Accordingly, we sustain the obviousness rejection of these claims for the same reasons as the independent claims. See 37 C.F.R. § 41.37(c)(1)(iv).

The Rejection of Dependent Claim 42 Under 35 U.S.C. § 103(a)

Claim 42 depends from claim 34 and specifies that “higher layer information carried in the physical layer resources used by the wireless terminal are not necessary to determine whether or not the wireless terminal has the enhanced capability.” Br. 53. Appellants contend that Tzavidas “directly teaches away from claim 42” because Tzavidas “explicitly

indicates” that a wireless terminal uses media access control (MAC) layer messages to communicate with a base station. *Id.* at 39.

In response, the Examiner notes that the rejection relies on Harris, not Tzavidas, for the limitation in claim 42. Ans. 17. Further, the Examiner finds that Harris teaches that a base station determines that a wireless terminal “is associated with higher signal strength or a higher priority class . . . only based on the code group of the spreading channel code and not based on other higher layer information transmitted in the ‘initial access signal’ message that was transmitted using the spreading channel code.” Final Act. 29 (citing Harris ¶¶ 3, 18–25, 27–33, Figs. 3–5). Additionally, Appellants identify no portions of Tzavidas that “criticize, discredit, or otherwise discourage” the subject matter of claim 42. *See* Br. 39.

Accordingly, Appellants’ arguments are not persuasive of Examiner error in rejecting claim 42 for obviousness based on Tzavidas and Harris. Hence, we sustain the rejection of claim 42.

*The Rejections of Dependent Claims 6–8,
15–17, 22, 39, and 40 Under 35 U.S.C. § 103(a)*

Claim 6 depends from claim 1 and specifies that “the transmission characteristic further comprises utilization of a specified portion of a time-frequency grid reserved for use by the wireless terminal with the enhanced capability during the ranging procedure.” Br. 44. Claim 8 depends from claim 7 and specifies that “the base station broadcasts an indication of the specified portion of a time-frequency grid which is usable by the wireless terminal with the enhanced capability for the ranging procedure.” *Id.* at 45. Claims 7, 15–17, 22, 39, and 40 recite similar features relating to the time-frequency grid. *Id.* at 40–41, 45, 47–49, 53.

Appellants argue that the Examiner erred in rejecting these dependent claims because (1) both Li and Lee concern reserving resources for a wireless terminal during handover and (2) the resources are reserved regardless whether the wireless terminal has enhanced capability.

Br. 40–41. Appellants also argue that nothing in either Li or Lee indicates that a specified portion of the time-frequency grid is reserved for a wireless terminal having enhanced capability. *Id.*

Appellants’ arguments do not persuade us of Examiner error because, as the Examiner explains, the arguments rest on an improperly narrow interpretation of “enhanced capability” resulting from a comparison of IEEE standard 802.16m to an earlier version of that standard. Ans. 18. Further, the Examiner finds that both Li and Lee teach reserving a specified portion of the time-frequency grid for a wireless terminal. *See, e.g.*, Final Act. 33, 36–37 (citing Li ¶¶ 21, 37, 56, 63, Figs. 2–3; Lee ¶¶ 36, 46, 87–89).

Appellants do not dispute those findings. Br. 40–41. The Examiner also finds that the wireless terminals associated with the reserved portions of the time-frequency grid have enhanced capability, i.e., because the wireless terminal in Li comes within range of an additional base station and the wireless terminal in Lee performs ranging faster. Ans. 18; *see also* Final Act. 33, 36–37.

Accordingly, Appellants’ arguments are not persuasive of Examiner error in rejecting claims 6–8, 15–17, 22, 39, and 40 for obviousness. Hence, we sustain the rejections of these claims.

*The Rejection of Dependent Claims 26, 27,
29, 30, 32, and 33 Under 35 U.S.C. § 103(a)*

Claim 33 depends from claim 20 and specifies that “the terminal ranging unit is also configured to transmit the signal with the transmission characteristic during a periodic ranging procedure.” Br. 51. Appellants argue that the Examiner erred in rejecting claim 33 because Ju’s periodic ranging procedure employs a media access control (MAC) layer message instead of a physical-layer transmission characteristic. *Id.* at 41.

Appellants’ argument does not persuade us of Examiner error because, as the Examiner explains, the rejection relies on Harris, not Ju, for the capability categorization based on a physical-layer transmission characteristic. Ans. 18–19; *see, e.g.*, Final Act. 11–13, 30–31. Appellants do not dispute the Examiner’s finding that Ju discloses a periodic ranging procedure. *See* Br. 41; *see also* Final Act. 31.

Accordingly, Appellants’ arguments are not persuasive of Examiner error in rejecting claim 33 for obviousness. Hence, we sustain the rejection of claim 33.

Like claim 33, dependent claims 26, 27, 29, 30, and 32 stand rejected for obviousness based on Tzavidas, Harris, and Ju. Final Act. 30–31. Appellants do not present any patentability arguments for these dependent claims beyond the arguments for the independent claims. Br. 39–41. Accordingly, we sustain the obviousness rejection of these dependent claims. *See* 37 C.F.R. § 41.37(c)(1)(iv).

*The Rejections of Dependent Claims 9,
10, 18, 19, and 23 Under 35 U.S.C. § 103(a)*

Appellants do not present any patentability arguments for dependent claims 9, 10, 18, 19, and 23 beyond the arguments for the independent

claims. Br. 39–41. For instance, Appellants say nothing about Eom or Maheshwari. *Id.* Accordingly, we sustain the obviousness rejections of these dependent claims. *See* 37 C.F.R. § 41.37(c)(1)(iv).

DECISION

We affirm the Examiner’s decision to reject claims 1–24, 26, 27, 29, 30, and 32–42.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED